ABSTRACT

A symmetrical vertical Hall element comprises a well of a first conductivity type that is embedded in a substrate of a second conductivity type and which is contacted by four contacts serving as current and voltage contacts. From the electrical point of view, such a Hall element with four contacts can be regarded as a resistance bridge formed by four resistors R_1 to R_4 of the Hall element. From the electrical point of view, the Hall element is then regarded as ideal when the four resistors R_1 to R_4 have the same value. The invention suggests a series of measures in order to electrically balance the resistance bridge. A first measure exists in providing at least one additional resistor. A second measure exists in locally increasing or reducing the electrical conductivity of the well. A third measure exists in providing two Hall elements that are electrically connected in parallel in such a way that their Hall voltages are equidirectional and their offset voltages are largely compensated.